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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,901	07/03/2003	Masahiko Kamijoh	236205US2	3608
22850 7590 02/26/2007 OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER MORRISON, THOMAS A	
			ART UNIT 3653	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		NOTIFICATION DATE	DELIVERY MODE	
3 MONTHS		02/26/2007	ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 02/26/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/611,901

Applicant(s)

KAMIJOH, MASAHIKO

Examiner

Thomas A. Morrison

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5,10,12,14 and 15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,10,12,14 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/23/2007 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Publication No. 2002/0036377 (Togashi) in view of the website <http://www.sdplastics.com/polyeth.html> (dated January 21, 1997).

Regarding claim 1, Figs. 11-13 and 53 of Togashi show an image forming apparatus (30), including

an image forming section (near 35); and

a sheet feed apparatus (near 4) aligned to feed a sheet to the image forming section (near 35) and having

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a sheet feed roller (4) in pressing contact with an uppermost sheet of a plurality of sheets, and

a tilt member (including 6 and 9 in Figs. 11-13) opposing the sheet feed roller (4),
the tilt member (including 6 and 9) including

a tilt member main body (6);

a contact face (9b) in pressing contact with the sheet feed roller (4), and

a tilt face (9a) in contact with an edge of the uppermost sheet.

Moreover, Togashi discloses that the tilt face (9a) and the contact face (9b) are made of a first material (numbered paragraph [0108]) and the tilt member main body is made of a second material (numbered paragraph [0102]) different from the first material. More specifically, Fig. 13 and numbered paragraphs [0114]-[0115] of Togashi provide a general teaching of the advantages of using a different material (e.g., metal) in the region where the contact face and the tilt face are located than the rest of the tilt member (synthetic resin), because this region is **susceptible to abrasion**. However, Togashi does not explicitly disclose that the tilt face (9a) and the contact face (9b) are made of a first material consisting of one of PE and PBT, as claimed.

Regarding claims 1 and 3, the website <http://www.sdplastics.com/polyeth.html> (dated January 21, 1997) discloses that high density polyethylene is an excellent **abrasion resistant** product preventing gouging, scuffing and scraping. See enclosed printout of this website. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide PE plastic rather than the metal disclosed in Togashi in the region of the tilt face and the contact face, because plastic is a well

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known substitute for reducing manufacturing cost. Moreover, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use PE plastic as the different material in the region of the tilt face and the contact face to achieve excellent abrasion resistance, as taught by the website <http://www.sdplastics.com/polyeth.html> (dated January 21, 1997). Thus, all of the limitations of claims 1 and 3 are met.

3. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Publication No. 2002/0036377 (Togashi) in view of The article entitled "Application of Engineering Plastic Materials to Office Automation and Audio-Visual Appliances in Japan".

Regarding claim 1, Figs. 11-13 and 53 of Togashi show an image forming apparatus (30), including

- an image forming section (near 35); and

- a sheet feed apparatus (near 4) aligned to feed a sheet to the image forming section (near 35) and having

- a sheet feed roller (4) in pressing contact with an uppermost sheet of a plurality of sheets, and

- a tilt member (including 6 and 9 in Figs. 11-13) opposing the sheet feed roller (4), the tilt member (including 6 and 9) including

- a tilt member main body (6);

- a contact face (9b) in pressing contact with the sheet feed roller (4), and

- a tilt face (9a) in contact with an edge of the uppermost sheet.

Moreover, Togashi discloses that the tilt face (9a) and the contact face (9b) are made of a first material (numbered paragraph [0108]) and the tilt member main body is made of a second material (numbered paragraph [0102]) different from the first material. More specifically, Fig. 13 and numbered paragraphs [0114]-[0115] of Togashi provide a general teaching of the advantages of using a different material (e.g., metal) in the region where the contact face and the tilt face are located than the rest of the tilt member (synthetic resin), because this region is **susceptible to abrasion**. However, Togashi does not explicitly disclose that the tilt face (9a) and the contact face (9b) are made of a first material consisting of one of PE and PBT, as claimed.

Regarding claims 1 and 5, the article entitled "Application of Engineering Plastic Materials to Office Automation and Audio-Visual Appliances in Japan" explains the use of PBT in office automation (e.g., printers), and explains that PBT is suitable for injection molding and has **large abrasion resistance** and low friction resistance. See Introduction on page 5 and pages 8-9 of this article. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide PBT plastic rather than the metal disclosed in Togashi in the region of the tilt face and the contact face, because plastic is a well known substitute for reducing manufacturing cost. Moreover, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use PBT plastic as the different material in the region of the tilt face and the contact face to achieve large abrasion resistance, as taught by the article entitled "Application of Engineering Plastic Materials to Office Automation and Audio-Visual Appliances in Japan". Thus, all of the limitations of claims 1 and 5 are met.

4. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Publication No. 2002/0036377 (Togashi) in view of the website <http://www.craftechind.com/material.htm> (dated January 20, 1998), and further in view of the article entitled "Application of Engineering Plastic Materials to Office Automation and Audio-Visual Appliances in Japan".

Regarding claim 10, Figs. 11-13 and 53 of Togashi show a sheet feed apparatus (30), including

a sheet feed roller (4) in pressing contact with an uppermost sheet of a plurality of sheets; and

a tilt member (including 6 and 9) opposing the sheet feed roller (4), the tilt member (including 6 and 9) including

a tilt part (9), and

a support part (6), the tilt part (9) including

a contact face (9b) in direct contact (see e.g., Fig. 12) with the sheet feed roller (4), and

a tilt face (9a) in contact with an edge of the uppermost sheet.

Also, Togashi discloses that the tilt part (9) comprises a first material (numbered paragraph [0108]) and the support part (6) comprises a second material (numbered paragraph [0102]) different from the first material. More specifically, Fig. 13 and

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numbered paragraphs [0114]-[0115] of Togashi provide a general teaching of the advantages of using a different material (e.g., **metal**) in the region where the tilt part (9) than the support part (6) (synthetic resin), because the tilt part is susceptible to abrasion. However, Togashi does not explicitly disclose that the tilt part (9) comprises a first material consisting of one of PEEK, PI and an alloy that includes PAI, as claimed.

Regarding claims 10 and 12, the website

<http://www.craftechind.com/material.htm> (dated January 20, 1998) discloses that an alloy that includes polyimide (PAI) (i.e., reinforced Torlon) is a material with a combination of assets that make it a **good substitute for metal**. See enclosed printout of this website. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an alloy that includes polyimide (PAI) rather than the metal disclosed in Togashi in the region of the tilt part, because this alloy that includes polyimide (PAI) a material with a combination of assets that make it a good substitute for metal, as taught by the website <http://www.craftechind.com/material.htm> (dated January 20, 1998).

Moreover, numbered paragraph [0102] of Togashi discloses that since the support part (6) has a **complicated shape**, it is preferable that the support part (6) is integrally molded of a synthetic resin, and all of the listed second materials ABS, POM, PBT and PC in claim 10 are synthetic resins. However, Togashi does not explicitly disclose that the support part comprises a second material consisting of one of ABS, POM, PBT and PC.

The article entitled "Application of Engineering Plastic Materials to Office Automation and Audio-Visual Appliances in Japan" discloses that polycarbonate (PC) is has small molding shrinkage, which makes it suitable for parts that require **high shaping precision**. See e.g., page 7 of this article. It would have been obvious to one of ordinary skill in the art at the time the invention was made, to provide the apparatus of U.S. Patent Publication No. 2002/0036377 with a support part that is made of PC, because PC is suitable for parts that require high shaping precision such as the complicated shape of the support part, as taught by the article entitled "Application of Engineering Plastic Materials to Office Automation and Audio-Visual Appliances in Japan". Thus, all of the limitations of claims 10 and 12 are met.

5. Claims 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Publication No. 2002/0036377 (Togashi) in view of the website <http://www.tplast.ee/plast10en.php> (dated August 27, 2002), and further in view of the article entitled "Application of Engineering Plastic Materials to Office Automation and Audio-Visual Appliances in Japan".

Regarding claim 10, Figs. 11-13 and 53 of Togashi show a sheet feed apparatus (30), including

a sheet feed roller (4) in pressing contact with an uppermost sheet of a plurality of sheets; and

a tilt member (including 6 and 9) opposing the sheet feed roller (4), the tilt member (including 6 and 9) including

a tilt part (9), and

a support part (6), the tilt part (9) including

a contact face (9b) in direct contact (see e.g., Fig. 12) with the sheet feed roller (4), and

a tilt face (9a) in contact with an edge of the uppermost sheet.

Also, Togashi discloses that the tilt part (9) comprises a first material (numbered paragraph [0108]) and the support part (6) comprises a second material (numbered paragraph [0102]) different from the first material. More specifically, Fig. 13 and numbered paragraphs [0114]-[0115] of Togashi provide a general teaching of the advantages of using a different material (e.g., metal) in the region where the tilt part (9) than the support part (6) (synthetic resin), because the tilt part is **susceptible to abrasion**. However, Togashi does not explicitly disclose that the tilt part (9) comprises a first material consisting of one of PEEK, PI and an alloy that includes PAI, as claimed.

Regarding claims 10 and 14, the website <http://www.tplast.ee/plast10en.php> (dated August 27, 2002) discloses that PEEK (e.g., PEEK-HPV) has guaranteed high mechanical strength, low coefficient of friction and amended **abrasion resistance**. See enclosed printout of this website. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide PEEK plastic rather than the metal disclosed in Togashi in the region of the tilt part, because plastic is a well known substitute for reducing manufacturing cost. Moreover, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use PEEK plastic as

the different material in the region of the tilt part to achieve abrasion resistance, as taught by the website <http://www.tplast.ee/plast10en.php> (dated August 27, 2002).

Moreover, numbered paragraph [0102] of Togashi discloses that since the support part (6) has a **complicated shape**, it is preferable that the support part (6) is integrally molded of a synthetic resin, and all of the listed second materials ABS, POM, PBT and PC in claim 10 are synthetic resins. However, Togashi does not explicitly disclose that the support part comprises a second material consisting of one of ABS, POM, PBT and PC.

The article entitled "Application of Engineering Plastic Materials to Office Automation and Audio-Visual Appliances in Japan" discloses that polycarbonate (PC) is has small molding shrinkage, which makes it suitable for parts that require **high shaping precision**. See e.g., page 7 of this article. It would have been obvious to one of ordinary skill in the art at the time the invention was made, to provide the apparatus of U.S. Patent Publication No. 2002/0036377 with a support part that is made of PC, because PC is suitable for parts that require high shaping precision such as the complicated shape of the support part, as taught by the article entitled "Application of Engineering Plastic Materials to Office Automation and Audio-Visual Appliances in Japan". Thus, all of the limitations of claims 10 and 14 are met.

6. Claims 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Publication No. 2002/0036377 (Togashi) in view of the website http://www.polymerplastics.com/performance_vespel.shtml (dated August 16,

2000), and further in view of the article entitled "Application of Engineering Plastic Materials to Office Automation and Audio-Visual Appliances in Japan".

Regarding claim 10, Figs. 11-13 and 53 of Togashi show a sheet feed apparatus (30), including

a sheet feed roller (4) in pressing contact with an uppermost sheet of a plurality of sheets; and

a tilt member (including 6 and 9) opposing the sheet feed roller (4), the tilt member (including 6 and 9) including

a tilt part (9), and

a support part (6), the tilt part (9) including

a contact face (9b) in direct contact (see e.g., Fig. 12) with the sheet feed roller (4), and

a tilt face (9a) in contact with an edge of the uppermost sheet.

Also, Togashi discloses that the tilt part (9) comprises a first material (numbered paragraph [0108]) and the support part (6) comprises a second material (numbered paragraph [0102]) different from the first material. More specifically, Fig. 13 and numbered paragraphs [0114]-[0115] of Togashi provide a general teaching of the advantages of using a different material (e.g., metal) in the region where the tilt part (9) than the support part (6)(synthetic resin), because the tilt part is **susceptible to**

abrasion. However, Togashi does not explicitly disclose that the tilt part (9) comprises a first material consisting of one of PEEK, PI and an alloy that includes PAI, as claimed.

Regarding claims 10 and 15, the website http://www.polymerplastics.com/performance_vespel.shtml (dated August 16, 2000) discloses that PI (e.g., Vespel-Polyimide) retains its outstanding creep, **abrasion resistance**, and strength under adverse conditions. See enclosed printout of this website. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide PI plastic rather than the metal disclosed in Togashi in the region of the tilt part, because plastic is a well known substitute for reducing manufacturing cost. Moreover, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use PI plastic as the different material in the region of the tilt part to achieve outstanding abrasion resistance, as taught by the website http://www.polymerplastics.com/performance_vespel.shtml (dated August 16, 2000).

Moreover, numbered paragraph [0102] of Togashi discloses that since the support part (6) has a **complicated shape**, it is preferable that the support part (6) is integrally molded of a synthetic resin, and all of the listed second materials ABS, POM, PBT and PC in claim 10 are synthetic resins. However, Togashi does not explicitly disclose that the support part comprises a second material consisting of one of ABS, POM, PBT and PC.

The article entitled "Application of Engineering Plastic Materials to Office Automation and Audio-Visual Appliances in Japan" discloses that polycarbonate (PC) is has small molding shrinkage, which makes it suitable for parts that require **high shaping precision**. See e.g., page 7 of this article. It would have been obvious to one of ordinary skill in the art at the time the invention was made, to provide the apparatus of U.S. Patent Publication No. 2002/0036377 with a support part that is made of PC, because PC is suitable for parts that require high shaping precision such as the complicated shape of the support part, as taught by the article entitled "Application of Engineering Plastic Materials to Office Automation and Audio-Visual Appliances in Japan". Thus, all of the limitations of claims 10 and 15 are met.

Response to Arguments

7. Applicant's arguments with respect to claims 1 and 10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Nos. 6,059,483 (Owens et al.) and 6,280,055 (Merko) disclose that it is well known to replace metal parts with plastic parts to reduce manufacturing cost.

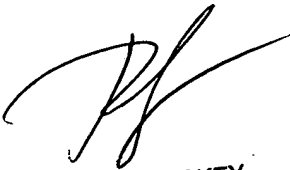
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A. Morrison whose telephone number is (571) 272-7221. The examiner can normally be reached on M-F, 8am - 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Mackey can be reached on (571) 272-6916. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

02/15/2007



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